35: Hooper and Field 3-5 (1934) 1937 MAI Iran MAI
Iraq MNI

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278*
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This plant is a gigantic shrub, remarkable for its legumes, which are several feet long. It has been called Burmese tamarind. The seeds are more or less heart-shaped, flattened, about 2 inches in diameter, with a shining, brown surface. They are used by some hill tribes for washing the hair, as they contain saponin. Aitchison remarks that Kora-i-kamar seeds are exported from India to Iran and employed in medicine. In Tehran they are powdered and, mixed with yolk of egg, made into a plaster for pain in the back.

Equisetum ramosissimum Desf. (Equisetaceae)

قنطریون

Qantaryūn (Teh.); the herb, horsetail.

W.H.M.M. 150859.

The light green stalks of the horsetail with their brittle structure and acute edges appear by some mistake to have been intended to represent the centaury plant (*Erythraea Centaurium* Pers., Gentianaceae). They could not replace the pleasantly bitter centaury herb. *Dianthus anatolicus* Boiss. is called Kanturiyan in Iran, where it is also used as a substitute for the centaury of the European flora. The centaury, like other plants of the gentian family, is a domestic remedy for a general tonic.

Eremurus Aucherianus Boiss. (Liliaceae)

سریش سفید

Sirish-i-safīd (Isf., Teh.); commercial names: chiresh, sarish, siris, shirias; roots of the giant asphodel.

Field 1, 2 (Isf.); 80A, 240.

The roots of one or more species of asphodel, including *Asphodelus ramosus* L., are found in commerce in Iran and Central Asia, and are trade products in Mosul and Leh, either dried entire or powdered (Sirish-i-narm). They are exported from the Balad Sinjar district in northwestern Iraq to Syria (G.). The roots, whitish, twisted, hard, light brown, swell and soften and partly dissolve in water, forming a thick mucilage. Water added to the powder forms a glue used for cementing leather, in binding books, and for other industrial purposes. The green part of the plant is eaten.

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Erysimum repandum L. (Cruciferae)

تخم خاک شیر

Tukhm-i-khāk-i-shīr (Ham.); Khakshir-talkh (Isf.); Khakechi (Schl.); Khubah (Ar.); Kashir (Bal.); the seeds.

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382 PETROLEUM AND COAL PRODUCTS INDUSTRIES--refining and processing of petroleum; manufacture of coal products (e.g., illuminating gas, coal tar); use of special apparatus and machinery; processing techniques; products and their uses; economic importance of petroleum and coal products industries; organization of labor and production; etc. See also:

Oil and gas wells and pipelines 315
Coal mines 315
Heating and lighting systems 354
Thermal power 375
Refining machinery 402
Plumbing fixtures 414
Filling stations 495

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

185 654 135 433 Ruṭba, led to no discoveries. An experiment in the export of bitumen to India was short lived. Nor could industrial development proceed far, though it had its place in the programme of every Cabinet and in 1929 was encouraged by indulgent legislation in its favour. 'Iraqi capital, exploitable raw materials, a class of skilled artisans and local purchasing power: these were all lacking. The Government's Industrial Exhibition at Baghdad in 1932 had little to show. There had been local development of electric power and mechanized brick-making. Two ginneries, one British one 'Iraqi, stood ready for cotton that was slow to appear. Two wool mills dealt with the inferior local fleeces, small cigarette factories had transformed smokers' taste, a soap works and a tannery were indifferently successful. A cement factory was long projected, and in 1932 a concession was granted to Yasin Pasha and partners. To utilize 'Iraq's surplus products plans were made for a shoe factory, a fruit-canning plant, and date-sugar production. But the total of these could do little to solve the country's problems.

382 471 With the petroleum industry it was otherwise. Though oil export could not commence until late in 1934, it was established in 1927 that 'Iraq was to take its place among the world's great oil territories. The Turkish Petroleum Company's drilling campaign, inaugurated by the King with due ceremony in April of that year, was early rewarded by an oil strike of exceptional abundance at Baba Gurgur close to Kirkuk on 27 October; and while drilling at many locations proceeded with varying success, the dimensions and behaviour of the Kirkuk structure were confirmed by later tests as those of an oilfield of the very highest class, whatever others 'Iraq might prove to contain. The four years following were devoted, on the one hand, to preparing the Kirkuk field for production by drilling and scientific observation, and by the provision of necessary services—production installations, tankage, workshops, housing, and amenities—and on the other, to negotiating with Government for an extension of the period permitted for plot-choosing under the 1925 Convention, since much of northern 'Iraq had meanwhile been inaccessible to exploration: or, alternatively, for a recasting of that agreement itself. These negotiations ended with an agreement of March 1931 whereunder the Company (renamed 'Iraq Petroleum Company in 1929) renounced all its territory west of Tigris and south of latitude 33 but, within the retained area (which was the whole of north-eastern 'Iraq), could exploit not only chosen and limited plots but the whole territory. The Company promised to construct by 1935 pipelines to the Mediterranean of at least 3 million tons capacity, bifurcating at the Euphrates towards Haifa and Tripoli, and to pay annual lump sums of £400,000 (gold) a year to Government, pending production and

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

the earning of royalties. The agreement once passed by Parliament, at the cost of one ministerial resignation, the Company could plan and execute its twofold desert pipeline and its mid-desert pump-stations: works which called for its utmost efforts, human and financial, for the next three years. These and the continuing field operations in Kirkuk area constituted by far the most important man-made enterprise of 'Iraq's long history and, it could be hoped, the most advantageous to its Treasury and public.

The internal structure of the 'Iraq Petroleum Company was completed by the definite admission of its American shareholders, the Near East Development Corporation, in 1928. The I.P.C. fields headquarters in 'Iraq moved from Ṭuz Khurmatu to Kirkuk in 1931, while that of its pipelines was established at Haifa. The annual payments, of which Turkey received 10 per cent. under the 1926 Treaty (p. 156), were made in sterling at the Bank of England exchange rate as between gold and sterling.

The area of north-western 'Iraq released by the I.P.C. in 1931 was next year allotted by Government to the B.O.D. Company, a British group, with considerable Italian, German, and other foreign shareholding, which had tried vainly to acquire 'plots' under the I.P.C. Concession of 1925, and in 1929 had protested at Geneva against its exclusion. Inheriting the test-drilling results of the I.P.C. west of Tigris, the B.O.D. bound itself to pay in advance of production an annual dead rent of £100,000 (gold), rising to £200,000: to export a stated minimum of 1 million tons per year within a seven-year time limit: and to allot to Government without charge a fifth of its crude production in addition to the royalty of 4 shillings (gold) per ton. The Company proceeded forthwith to the further exploration of its territory, forming an operating company, Mosul Oil Fields, for the purpose.

The Anglo-Persian meanwhile, with its smaller concession in the Transferred Territories and its revised 1926 agreement (p. 174), formed the Khaniqin Oil Company as its subsidiary for production within 'Iraq, and completed its Alwand refinery near Khaniqin in May 1927, when King Faysal opened it. Thereafter north and central 'Iraq were supplied at favourable prices with petroleum products from this source; southern 'Iraq still drew from Abadan. A network of distribution facilities soon covered the territory; it was managed by the Rafidain Oil Company, an Anglo-Persian distribution company formed for the purpose. Drilling at the Naft-khana field was limited hereafter by the K.O.C. to its actual needs, and at Chiah Surkh, where it had been abandoned in 1904, 1912, and 1924, it was resumed in 1930; but production still proved impracticable.

The daily lives of more 'Iraqis could be affected by progress in

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

equivalent to first 15, later 25, and finally 35 per cent. of the Japanese imports. Russian competition, begun with formidable impetus in 1933, did not persist.

The transit trade with Persia, which by all indications had been under sentence of disappearance, survived though with a gradual loss of volume. It was aided by central and northern Persia's import of oil products, and by a small intake from the Levant across 'Iraq. Persian attempts to divert traffic from 'Iraqi routes, however, continued, and Muḥammara (now Khoramshahr) began to replace Baghdad as the financial centre of the trade.

The banking and financial background of internal business varied little, though an intention of closer Government control was shown by the law restricting certain occupations to 'Iraqis, by insistence on security deposits from foreign insurance companies, by the expressed willingness of Government to participate directly in industry and, early in 1938, by a law for the control of banking. The currency was well maintained on its sterling parity, the Board in London contributing an annual profit to the 'Iraq Treasury. The handling, transport, and distribution of merchandise was in some degree modernized; shops and hotels of European pattern multiplied, not in Baghdad alone, with Jews and Christians still prominent in these activities. Features of the period, which helped to bridge the 'Iraq of the 'twenties to that of the mid-century, were the beginnings of new suburbs, the modern villas, the many private cars, and the rudimentary bus services of the principal cities. They served a public in which the townsmen had in hundreds renounced Arab dress for European, had often doffed the characteristic 'Iraqi *sidara* in favour of a hat or bare head, and could walk out with ladies among whom the veil was no longer universal.

Local industry advanced but slowly. To the enterprises mentioned on earlier pages (p. 210) the years from 1932 to 1937 had little to add. One or two of the small textile factories were enlarged with German machinery and Czech operators; more small cigarette factories and more mechanized brick kilns were established, one-room ice and soda factories multiplied, a third cotton ginnery was planned for the Kut area, and enterprises for the making of confectionery and matches came into humble existence. Yasin Pasha's cement project, in spite of a visit by German experts, failed to materialize, and another cement scheme, in which an English promoter was active, inspired no confidence.

In oil development, on the other hand, these years were highly significant. The 'Iraq Petroleum and the B.O.D. Companies (p. 211) made annual dead-rent payments to a combined total of more than half a million pounds yearly until 1935, and thereafter the I.P.C. royalties alone doubled this amount. After a ceremonial

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

382 opening at Kirkuk in January 1935, its twin 12-inch pipelines to Haifa and Tripoli came into operation. This achievement marked the end of ten years of patient and well-directed work since the grant of the first concession, and by its employment of 'Iraqis in their thousands, its expansion of communications and the example which it offered of successful large-scale modern industry, it added great advantages for the 'Iraqi public to the direct enrichment of their Treasury. The gradually developing works in Kirkuk oilfields, the main depots at Bayji and Haditha, the mid-desert pump-station townships with their connecting roads, pipeline, and telegraphs became a characteristic feature of the modern 'Iraqi scene, while its production, of 4 million tons of crude oil a year from 1935 onwards, placed the country immediately as the eighth oil-producing country of the world. The B.O.D. Company, whose shareholding was in these years predominantly Italian, German, and Franco-Swiss, soon found itself embarrassed by its obligation of annual payment to Government, and by its failure, in spite of an active drilling campaign from 1933 onwards, to discover other than viscous, scarcely marketable oil. The Company's plan in 1935 of diminishing their cash payments by building a Qaiyara–Tall Kochek railway, which could convey their oil to seaboard and link 'Iraq with the Turkish railway system, was after hesitation rejected by Government. Their financial position grew desperate, and a reconstruction of their Board in 1936 marked the transfer of control of the Company to the I.P.C. group; and the latter emerged soon afterwards as outright owners of the B.O.D. and Mosul Oil Fields, with the disappearance of all non-British shareholding in it other than that of the I.P.C., French, and American constituents themselves. The problem of its viscous and sulphurous oil remained to be solved. The smaller Rafidain and Khaniqin Companies (p. 211) continued respectively their work of producing and refining oil in the Transferred Territories, and of marketing it throughout 'Iraq. The project of a Government-owned refinery, for which the I.P.C. concession provided, was conceived during this period but was to prove slow of realization.

Road-surfacing was among the uses of oil products in 'Iraq, but neither this nor the too limited funds available could do much at present to provide the country with roads of high or even tolerable standard. Some further sections such as that from Ramadi to Ruṭba were metalled, others were indifferently or barely maintained, all were at worst passable; road maintenance, costly and inconspicuous, was given habitually a low priority in Government allotments. Traffic on the Najf–Madina route increased. The route from the Euphrates to 'Amman and Haifa developed as a powerful rival of the northern track to Beirut. The Rawanduz road, dis-

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

Politics and war-attitude apart, conditions in the territory throughout 1940 were as secure and tolerable as could be hoped. A number of offenders sentenced by the courts martial of previous régimes were liberated, the State of Emergency at al-Rashid camp, in force since March 1939, was brought to an end. Ṣubiḥ Najib was pardoned and released. The Ministry, to whom in some circles the revered Gaylani name was an asset, declared war on immorality, shut places of evil entertainment or drunkenness, and ostentatiously improved Waqf buildings. The foundation stone of the Faysal Mosque was laid. Observance of the Ramaḍhan fast was enforced by the daytime closing of restaurants. The completion of the Baiji–Mosul section of the railway, with its long tunnel, permitted at last a direct Baghdad–Istanbul service, though rolling stock available for use was of the scantiest. Work at the Ḥabbaniya reservoir was pressed forward. Oil production was normal again since the month-long interruption in September 1939, and both pipelines remained in use until the stoppage of pumping, on the Tripoli branch into Vichy–French territory, in July 1940. The sowings of cotton were much increased, and 25,000 bales produced. The Government tobacco monopoly was brought into effect, to the chagrin of many Kurdish growers whose freedom of disposal it curtailed. Agriculture was everywhere encouraged with a view to full national self-sufficiency, though the disastrous spring floods were a reminder of its precariousness.

Commercial and industrial life strove to maintain normality, or even progress. An ambitious Co-operative Society to produce fruit preserves was founded. The Agricultural and Industrial Bank was busy with loans to cultivators, and with the sale and servicing of agricultural machinery; it advanced money also to a new ginnery at 'Aziziya, took shares in the 'Iraq Cement Company, and helped a vegetable-oil extraction plant. Work proceeded on the Baghdad automatic telephone installation. The budget for 1940–1, which allotted a third of all revenues to the Army, found room for the cost of completing the irrigation work on the Abu Ghurayb, and for the Ḥawija project, the Diyalā weir, the Shamiya river improvement, and the 'bunds' around Baghdad. The credit allowed by the banks and *ṣarrafs* was extended or restricted according to the war news, market prices rose and fell, Government's control in the economic field was discreet and indeed largely inoperative. Shortage of shipping and transport vehicles were a serious hindrance to the export trade, whether conveyed by sea or by the land routes. A Turkish mission visited Baṣra with the hope of securing a southern gateway of entry for their country. The loss of French purchases of 'Iraqi wool was severely felt; trade with Japan on the contrary seemed likely to develop fast.

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

433 increased on a small scale: the tanning industry was partly mechanized and the quality of its output improved. The two existing mechanically operated wool factories, the unmodernized distilleries, the three cotton ginneries, the small soap-works and cigarette factories, were increased during the war by an attempt at brewing, a primitive glass-works, a factory for paint and another for wax matches. The long-planned cement factory was not yet in production. An important cotton-spinning and weaving project had been initiated, but had not yet begun to operate. A plan to create a cinema studio in Baghdad was in 1945 the object of a visit by a British expert.

382 722 The necessity of postponing further oil development was, equally to the British companies and to the Government, the more regrettable as it seemed not to apply to comparable enterprises in Persia or Arabia; in the former, aviation spirit and other products were produced on a vast scale for war purposes, and in the latter American industry could find abundant equipment when British could not, and could secure for Sa'udi Arabia a long lead in production. The I.P.C. was forced to renounce until after the war the additional pipelines and consequent additional production which it had planned in 1938; indeed, its output was forced down by events in the Levant in 1941–2 from four to two million tons, and restored to full capacity only in 1944. The damage done to its installations in May 1941 was soon repaired, and it was able to assist the British forces by the provision of quarters and air-fields, loan of personnel, communications facilities, and the supply of refined products. The output of these was increased for war purposes, and plant at Kirkuk was improvised for the supply of motor spirit additional to that from Alwand. Factories for making tins were opened at Kirkuk and Mosul, and the two centres connected by pipeline. In Baṣra area a pipeline was built to connect Abadan and Shu'ayba. The destruction of many wells at Kirkuk as a precautionary measure against enemy invasion was ordered by the Army in 1942, but fortunately did not interfere with current production. Drilling was suspended from mid-1941 until the latter part of the war. In the area of the Mosul Petroleum Company (formerly B.O.D.) no operations were possible during the war at 'Ayn Zala or elsewhere, though at Baṣra exploration continued. These postponements, unavoidable in conditions which made engineering supplies unobtainable, were formally authorized by an agreement between the Companies and the Government in March 1943, whereby in return for a loan of ID 1,500,000 the Government granted a 'period of suspension' to begin in May 1941 and to run until two years after the armistice. Meanwhile the project of a Government refinery remained alive, though at present untimely; and to question the terms—or

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

even the basic validity—of the oil concessions was a usual move of politicians in opposition.

In the greatest of 'Iraq's industries, that of agriculture, the war was a period of unusual activity, stimulated by the need to produce and by high prices. Agricultural machinery, thanks to lend-lease supplies, was seen almost for the first time in the northern liwās and those of Baghdad and Kut; in 1945 some scores of tractors, mechanical ploughs, cultivators, and combines were in operation, with great effect on 'Iraqi conceptions of agricultural possibilities. Projects for ambitious modern farming took shape among the educated and the owners of capital; a College of Agriculture had been founded in 1941; and a law was passed in 1944 authorizing the establishment of agricultural Co-operative Societies. But none of these measures prevented the increasing drift of countrymen in their hundreds or thousands towards the towns, where war-time employment was plentiful. In the field of land settlement, the committees, which had worked steadily and in increased numbers since 1933, were wisely kept at their all-important tasks throughout the war. Only minor attention was given as yet to southern 'Iraq, and little to Mosul, Arbil, Dulaym, Diwaniya, or Karbalā liwās; but much was done in the dispute-ridden agricultural lands of Kirkuk, Baghdad, Ḥilla, and Diyalā, where good progress was made with definition of land categories, the mapping of boundaries, and the recording of individual registrations over areas which now approached a million acres. Much was heard of plans both for model villages and for the allotment of small-holdings of Government land to single families—a sign that the evils of peasant insecurity, poverty, and lack of incentive were now fully realized. On the Dujayla Canal, dependent on the Kut barrage, work under a special law started in 1945 on a practical settlement of families on sixty-acre State-owned plots, with the incentive of free title to be gained after ten years of work; and meanwhile village institutions and amenities—school, farm offices, nurseries, dispensaries, and a co-operative store—were provided by the Directorate. The Dujayla Scheme was full of promise; it started with eighty carefully-chosen families, later to be multiplied tenfold, and it aroused keen competition for admission.

'Iraq's security after 1941 allowed its vital Irrigation services to continue their canal maintenance and flood protection, their studies and planning, though the intended major projects could not at present be initiated. The work interrupted in 1941 on the Habbaniya–Abu Dibis outlet was completed by 1943, and the intake-channel from the river (begun under Willcocks) and the return-channel to it, were redesigned but not yet undertaken. Pump irrigation was fully maintained.

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

Much progress had been made, under the care of a Hides Association, in the better treatment of local hides and skins, and well-tanned leather was produced. Boot and shoe manufacture, largely by electrically-operated machinery, had increased in scale and quality. The cement factory outside Bahgdad, using lime brought from near Ṭuz Khurmatu, came into important production in 1949 and was soon selling 250 tons a day. The three cotton ginneries erected before the war—one of them an Agricultural Bank enterprise at 'Aziziya—remained in being, with capacity to deal with much more than the available cotton crop. Printing presses, all small except one European-owned and that of the Government, remained substantially as before the war, save in their modernized equipment. The spinning and weaving industry, which in some cases also dyed and finished its fabrics, had by 1950 greatly increased its pre-war development and used in part local cotton; a factory in Mosul made also rayon cloth.

Other industrial projects more or less near to realization in 1950 were for rayon production from straw, for local production of fertilizers, and for sugar-refining. The treatment of tobacco leaf had been intensively studied, but remained defective. The industries likely, it was thought, to develop further, using 'Iraqi raw materials and diminishing the need for import, were those producing cement, soap, alcohol, vegetable oil, leather and shoes, cigarettes, beer, and textiles. The other industries would in all probability keep a lesser though perhaps a useful place; none was likely to produce a considerable surplus for export, unless, as some hoped, an industry could be founded to use, for fertilizers or otherwise, the abundant by-products of petroleum. The Development Board intended considerable expenditure on 'industrial and mining schemes' in the period 1951 to 1956, upon lines to be later revealed.

'Iraq's poverty in minerals other than petroleum seemed in part to have been corrected by the discovery, in the later forties, of interesting copper and copper pyrites deposits in the mountainous Qal'a Diza area, and by reports from the Government geologist of an outcrop of excellent marble near Rayat and supplies elsewhere of chromite, iron ore, magnesite. These, or some of them, were thought capable of commercial development. A hard limestone suitable for barrage building was sought and found. Local salt, gypsum, brick clay, Mosul building-stone, and cement-making materials were in use as before, and it was planned to renew the activity which during the war had produced up to 15,000 tons a year of Kifri 'coal'.

In spite of the imposed delays and frustrations of the war period the position achieved in the petroleum industry by 1950 was such as to place 'Iraq in the forefront of oil-producing countries, with

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

382 the promise or certainty that still greater developments were closely at hand. The project of a Government-built refinery, revived in 1945, was by the end of 1950 near to fulfilment with plans completed and funds available. The Khaniqin Oil Company's oilfield and small refinery, at Naftkhana and Khaniqin, were still in use on the restricted scale suited to the supply of products to northern and central 'Iraq; distribution of these throughout the country by the Rafidain Company showed no new feature until in 1951 supplies from Abadan ceased to arrive at Baṣra, and others from the north had, with difficulty and cost, to be improvised. The development work of the Mosul Petroleum Company—former B.O.D. reborn as a twin brother of the Iraq Petroleum Company—on the Upper Tigris right bank was pursued from 1947 onwards by the drilling of further wells at 'Ayn Zala and its neighbourhood, but revealed only a field of moderate dimensions and uncertain performance: it had not yet led—but under the B.O.D. concession must shortly lead—to commercial production. A pipeline from 'Ayn Zala to the I.P.C. pump station K.2 near Bayji was in 1950–1 under construction with a view to the export of M.P.C. oil thereby. In the Baṣra area, on the other hand, the B.P.C. had eagerly resumed its exploration after the war; after geophysical operations it started drilling at Nahr 'Umar and Zubayr with immediate success, and concentrated its exploitation upon the latter site, which was situated twelve miles south-west of Baṣra. Further wells were drilled, field installations erected, a pipeline to Fao laid in 1950, and the export of oil, at an initial rate of 2 million tons a year, became possible in the last days of 1951. The Zubayr oilfield, which might well be reinforced by others in the same province, would take its place as a valuable part of 'Iraq's resources.

The operations of the Iraq Petroleum Company itself after the war were still more impressive. The later war years witnessed no more than limited production under restricted war-time conditions and the resumption after 1943 of export to the Mediterranean was on the pre-war level barely exceeding 4 million tons a year. After the armistice, with the gradual removal of restrictions on supplies and man-power, the Company could effectively revive its 1938 project for multiplying its pipeline through-put, and in 1946 it began construction of a 16-inch pipeline[1] parallel to the existing 12-inch line from Kirkuk to Haifa, and another a few months later to Tripoli. The former, complete by early 1948 save for the section through Palestine, was perforce left unfinished in the conditions of war and future uncertainty which followed the establishment of the State of Israel in May of that year, and, with the 12-inch line, could not be operated; the cost to the 'Iraq Government was a loss

[1] The largest-diameter pipe then obtainable from sterling sources.

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

of nearly 7 million tons of through-put annually and a corresponding loss of royalty revenue. On the northern line to Tripoli, the construction of the 16-inch line was completed in mid-1949; export from Tripoli was thereby trebled and raised 'Iraqi export production to nearly 7 million tons a year. Less than a year later the Company undertook the building of a much greater pipeline, of 30-inch diameter. Designed to run from Kirkuk to the sea coast at Banyas in Syria (an alignment parallel to that of the 12- and 16-inch lines except at its western extremity) it would deliver 'Iraqi oil to the world's markets at a rate of some 14 million tons a year at its lowest rate of through-put, or much more with increased pumping installations.[1]

These extensions of the pipeline system were accompanied by important increases to the pumping plant and facilities at seven pumping stations on both sides of the point of bifurcation near Ḥaditha, and in the Kirkuk field itself. The development of the latter was carried out in its northern extension in Arbil liwā, beyond the Lesser Zab, by an active drilling campaign and the manifold operations which accompany it. With drilling went the provision of gathering lines, tankage, additional de-gassing stations, new units in the Stabilization Plant, new administrative and domestic buildings, workshops, stores, depots, laboratories, electric-power plant, and water lines. 'Iraqis were fortunate in their certainty that, in the development of the great wealth in their soil, the most modern and economic methods were being adopted without waste of or danger to its resources. The needs of the labour force were met by the initiation of a modern housing estate for 'Iraqi employees, canteens, sports grounds, transport to and from work, allowances and pay-revisions to meet the high cost of living, a savings fund, hospital extensions, and technical education both in 'Iraq and in the United Kingdom. In spite of the psychological, the material, and the (artificially fostered) 'political' difficulties inseparable from the presence of an advanced industrial enclave in a primitive economy of peasants, the living and working conditions of the oil workers were, while less than perfect, undoubtedly the best in contemporary 'Iraqi industry: and they were undeserving of the blatantly mendacious attacks, common in Baghdad newspapers, on the horrors of oil company employment and the brutality of the foreign exploiter. The industry brought also substantial indirect benefits to the public in local purchases and contracts, the increase of purchasing power, the provision of foreign exchange, the teaching of industrial skill, and the performance of valuable and costly services to Kirkuk municipality. It could in

[1] The 30-inch line, constructed at great speed, came into initial operation in the late spring of 1952.

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

382 1951 be anticipated that the continued presence and enlarged operations of the oil companies would remain an outstanding economic and social advantage to the 'Iraqi people: that, especially after the destruction of the great oil industry of Persia by the action of its Government, 'Iraq's position as a supplier of crude petroleum must give it an international importance greater than ever before: but also that the minds and emotions of local patriots, for whom the Persian tragedy had no terrors and no lesson, would not abandon the demand for a 'nationalization' which might or might not (according to its form and manner) permit the continuance of the industry. It was indeed clear that the presence in 'Iraq of successful, wealthy, and well-organized European enterprises with their foreign control, high living standards, and concession-granted privileges must, however correct their conduct and however enlightened their policy, be offensive to the nationalist sentiment of at least one school of local politicians; and the period during which oil development on these lines might be able to continue could not, for all its enormous advantages to the country, be confidently foreseen.

651 648 471 Meanwhile, to the 'Iraqi Treasury its receipts from oil sources were no longer a mere helpful supplement to other revenues but a main pillar of the Government itself and the foundation of all its hopes of development and improvement. The anxiety of 'Iraqi statesmen to derive still greater revenues from the oil industry than those provided in the 1925 or 1931 concessions—4 shillings (gold) per ton—and their claim that 'gold' should be translated into sterling at unofficial open-market rates led from 1947 to 1951 to repeated discussions between Government and Company. The gold question of which the Company, at 'Iraq's request, agreed in 1949 to allow settlement by a British Court rather than by arbitration, remained still unsettled when the period closed, with indications that the Baghdad Government intended still to press its full claims.[1] The question of royalty revision resulted in 1950 in a partly retroactive and conditional agreement to raise the 4 shillings gold per ton to 6 shillings gold; but this increase, immediately helpful as it was to the 'Iraq Treasury, was in turn to be superseded by further and long-drawn negotiations based on a new principle of half-and-half division of the profits: a principle which, first announced by the Arabian-American Company in Sau'di Arabia on the last day of 1950, could not but abruptly supersede all less favourable terms enjoyed by neighbouring countries. Conversations on this basis were in progress in Baghdad between Company

[1] These might amount to some £20 million sterling. Agreement upon a compromise figure (£5 million) was reached by the negotiators in 1951, but did not form part of the settlement ratified by Parliament early in 1952.

The ten industries referred to in the table are: cotton spinning and weaving (one establishment), cement (one establishment), wool spinning (two establishments), modern tanning (five establishments), beer (one establishment), alcohol (three establishments), vegetable oil (one establishment), modern soap making (one establishment), artificial and natural silk weaving (six establishments), jute spinning and weaving (one establishment still under construction). The total is 22 establishments all of which enjoy government assistance under the Law for the Encouragement of Industry, and practically all have received financial aid in the form of loans or capital participation from the Industrial Bank. None of them employs less than 20 workers, and the majority employ over a hundred workers. All use power-driven machinery. It is interesting to notice that most of these industries are owned by joint-stock companies and that they have distributed profits during the last three years ranging from 9 per cent to 25 per cent.

Obviously the table does not cover the whole field of industrial development in Iraq. It has been constructed on the basis of a selected sample to show the rapid progress made in recent years. The unusual increase in ouput compared with the rate of capital investment as shown in the table is to be explained by the fact that most plants were still under construction or half-completed in the early years. A complete survey of the industrial sector in the economy of Iraq is still to come. The Central Bureau of Statistics, Ministry of National Economy, is expected soon to embark on this task. Such a survey will have to cover, in addition to those industries included in the above table, the following:

(a) Other modern industries in the private sector which represent a substantial portion of the whole, such as flour milling, workshops and agricultural machine repair shops, printing, cotton ginning, cigarette manufacture, the building materials industry, shoe-making, etc.

(b) The great oil industry owned and operated by powerful foreign concerns holding concessions from the Government. The oil companies produced nearly 8 million tons of crude oil and 400,000 tons of refined products in 1951, and employ over 12,000 workers. Their production is expected to rise to 20 million tons of crude oil in 1955-56.

needed to prove the extent and quality of the ores located. This work has gone till now rather tardily, owing to the inadequate funds at the disposal of the Directorate General on Minerals. There also seems to be no clear policy as to how this wealth should be exploited: whether by the State directly or by concession to national or foreign enterprise. 135

Another factor delaying work in this field is the difficulty of transport to and from the sites of the ore deposits which are remotely situated in desert and mountain. [489]

Oil and gas are indeed plentiful in Iraq, and the exploitation of oil resources has indirectly helped to finance the industrial development so far achieved. But the cost of oil fuel and other oil products for local consumption is not much lower than in other countries because of the high rate of taxes on consumption. This and the limited range of oil products so far made in Iraq by the Alwand refinery, owned by the Anglo-Iranian Oil Co., have led to the import of a number of oil products from abroad. But the situation should change when the State-owned refinery, now under construction, goes into production. 382

Another problem connected with the supply of fuel is the lack of electric power. Power generation in Iraq is inefficiently organised and power rates, except in Basrah and Baghdad in recent years, are among the highest in the world. This has compelled most industries to generate their own power which has added a great deal to production cost. The recent reduction of power rates and the availability of electricity in Baghdad has been one of the major reasons for the concentration of industry in that city. 371

(3) Concentration of Industry: Industry in Iraq is heavily concentrated in the city of Baghdad which has a population of 550,000 inhabitants, in other words a little more than ten percent of the country's population. Excluding oil and one or two small textile, tanning, and grain-milling industries, all modern industry has been established in or near Baghdad, thus adding to the population and housing problems of the capital. There are many reasons for this concentration of industry. All routes converge on Baghdad; it has the largest population and, as the seat of Government, it offers easy access to the central authority. As an old trading centre Baghdad has a well-organised market, large financial resources, and managerial and office staffs. Some of the factors that have made Baghdad 438 [366]

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as 60,000 people are engaged in industrial production (other than oil), virtually all of these are employed in small undertakings where the work is largely done by hand and productivity is accordingly quite low. Probably only about 2,000 are working in what might be characterized as modern industrial plants.

Fortunately prospective increases in government revenues from oil now make it possible for the government to undertake a large-scale program for the development of the country. Past investments in the oil industry will in the future yield large dividends in the form of a rapidly increasing production of petroleum. In accordance with an agreement reached in August 1951, subject to ratification by Parliament, the three internationally-owned oil companies operating in Iraq have undertaken to raise oil output, which amounted to only about six million tons in 1950, to 30 million tons per year by the end of 1955 and to turn over to the Iraqi government half of the profits before the deduction of taxes. On this basis it is anticipated that, over the next five years, the governmen may receive net revenues amounting to as much as 214 million dinars from oil alone. Under the terms of a law passed in 1950 these revenues will be available to finance development. They will be assigned to the Development Board, an autonomous agency established in 1950 to ensure greater continuity in the planning and implementation of development programs.

In the past, financial stringencies have severely limited public expenditures. The government has often had difficulty in making both ends meet. Severe economy has been the rule. Development outlays had to be kept small; government salaries were not raised in accordance with the increasing cost of living; and local administration was starved of funds. In the future the situation will be reversed. The principal task will be to find ways and means of spending rapidly increasing revenues in a manner which will contribute most effectively to the permanent development of the country. It is with this task in view that the Mission has drawn up its recommendations.

Any program for realizing the economic potentialities of the country should be broad in conception and well balanced. Investment outlays in dams and irrigation works, transport facilities and industrial plants must be complemented by increased expenditures

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

The Mission has carefully considered what industries might be expanded and what new industries might be established. It has sought to confine its recommendations for industrial development to those industries where there is reasonable prospect of efficient production, competitive with imports, and where production is within the technical capacity available in Iraq, supplemented, where necessary, by outside technical and managerial assistance.

Petroleum and Refining

No recommendations need be made on the oil industry. The oil resources of Iraq are immense, the reserves of the Kirkuk field amounting reputedly to 1,000 million tons and those of the less well explored fields near Basra offering perhaps equal promise. The development of these resources by the oil companies is proceeding along sound lines. The oil companies have also been well in advance of other enterprises in providing housing, health services, and other amenities for their employees, in instituting labor training schemes and providing better pay for workers. The Mission realizes that there has been some criticism in Iraq of the rate of development, particularly in the Basra field. The expenditure of close to £90,000,000 by the oil companies on oil development in Iraq is now, however, beginning to yield a rapidly rising output. Production in recent years might have been much greater if the outbreak of the war with Israel had not resulted in closing the pipeline to Haifa and in preventing the completion of another pipeline to that city. The existing line has a capacity of 2,000,000 tons and the projected line would have added another 4,000,000 tons. As already indicated, the government has recently obtained a commitment by the oil companies to increase output, which was a little less than 6,000,000 tons in 1950, to 30,000,000 tons per year by the end of 1955. It would not be advantageous to Iraq, however, to have production increased to such levels that the ensuing rise in oil revenues cannot in fact be effectively spent. Oil in the ground is a reserve for the future, and too rapid tapping of this reserve may entail a partial waste of resources.

The government has decided to build a modern oil refinery near Baghdad which it anticipates will cost about £7,000,000. This refinery will use crude oil supplied from the Kirkuk fields at cost. With an annual capacity of 1,000,000 tons, it will be able to supply

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all of Iraq's anticipated requirements for some time. This decision reflects an understandable desire on the part of Iraq to have a modern refinery of its own, replacing the somewhat inadequate and rather old Alwand refinery at Khanaqin which is owned by a subsidiary of the Anglo-Iranian Oil Company and is capable of supplying not quite 70 percent of Iraq's current requirements.[8] Foreign management of the new refinery will probably be necessary, at least for an initial period. The project will make it necessary to close the Alwand refinery and probably also the small oil field near the Iranian border from which it draws its crude. This field probably cannot be developed on a scale large enough to warrant investment in the pipelines necessary to export the oil.

Expansion of Old Industries

Some industries are now expanding without government financial assistance. The cement plant and the brewery are both doubling their capacity. Recent improvements and expansion have put the woolen industry abreast of the country's needs. Other industries do not for the present require expansion. Flour milling capacity, for instance, appears ample. The tanneries also appear to have sufficient capacity, but to raise the quality of their raw material supply, technical assistance is needed to improve methods of flaying and preserving hides.

Still other industries could usefully be expanded but do not have sufficient financial resources to do so without government assistance. The cotton and rayon textile factories in Baghdad and Mosul might well double their designed capacity and extend their facilities to make a wider range of products. At present cotton textile capacity can meet only about a quarter of the country's requirements. Since ample raw material is available and costs of production can become competitive with those abroad, further expansion would appear to be warranted. In its regular budget for 1951-52 the government has provided ID 1,000,000 for a government textile mill. The Mission believes, however, that government ownership and operation would not be desirable and that it would be vastly preferable to extend capacity with the participation of private capital and enterprise.

[8] By an agreement reached in December, 1951, the government took over ownership of the refinery, retaining the AIOC subsidiary provisionally as its operating agent.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

315 2,500 and 2,800 feet and production costs are accordingly low. Production capacity has been increasing more rapidly than transport capacity. Until 1949 there were only two 12" pipelines with an annual capacity of over 2,000,000 tons each—one to Tripoli in the Lebanon, the other to Haifa in Palestine. With the outbreak of war with Israel the Haifa pipeline was shut down and work on the completion of an additional 16" pipeline to Haifa, which was to have an annual capacity of 4,000,000 tons, was halted. Output therefore had to be reduced from 4,354,000 tons in 1947 to 3,017,000 tons in 1948. With the completion of another 16" line to Tripoli in 1949, it rose again to about 6,000,000 tons in 1950. Work has proceeded steadily on the construction of a new 30" line, with an annual capacity of 13,000,000 tons, from Banias, Syria, and it is expected that this line will be linked in the spring of 1952 with the disused portions of the two lines to Haifa lying inside Iraq, thus permitting a partial use of the new capacity while the remainder of the line is finished in Iraq. Meanwhile the productive capacity of the Kirkuk field is being increased rapidly to an annual volume of over 20,000,000 tons.

In Mosul, where prospects are much less promising, production is not expected to begin until 1953 and then only at a rate of about 1,000,000 tons per year. Work on the fields near Basra, which are potentially very rich, was begun much later but is now rapidly proceeding. Production costs will be considerably higher than at Kirkuk because oil is found only at a depth of 10,000 feet or more. A pipeline with an annual capacity of about 2,500,000 tons has been completed to the port of Fao on the Persian Gulf, and oil is expected to start flowing early in 1952. The company has undertaken to increase production to 8,000,000 tons by 1955.

382 The output of the Khanaqin Oil Company is confined to two wells in the Naft Khaneh field and is used entirely in the company's Alwand refinery, a simple distillation plant which is the only refinery in Iraq. Although drilling is proceeding in the Chia Surkh field north of Khanaqin, it is unlikely that the company's total output will rise substantially. The company's Alwand refinery, which employs approximately 525 people, produces about 70 percent of the petroleum products consumed in Iraq, the remainder being supplied, until recently, from the Abadan refinery in Iran.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

Petroleum products are distributed by the Rafidain Oil Company, a subsidiary of the Anglo-Iranian Oil Company, and at prices, exclusive of taxes, which are among the lowest in the world.

TABLE 8

PRODUCTION OF PETROLEUM AND REFINED PRODUCTS
(in thousand metric tons)

	1947	1948	1949	1950	1951 (est'd.)
Crude oil					
Iraq Petroleum Company	4,354	3,017	3,671	5,986	7,500
Khanaqin Oil Company	339	367	365	384	350
Total	4,639	3,384	4,036	6,370	7,850
Refined products	n.a.	373	369	393	—

VI. Transport

The state-owned railway system is the principal means of transport, carrying about 2,000,000 tons of cargo and over 3,000,000 passengers annually. Part of it is standard and part meter gauge. The standard-gauge section is part of the original Berlin-Baghdad railway and runs from Baghdad northward via Mosul into Syria and Turkey. The meter-gauge line extends from the Port of Basra in the South to Baghdad and then beyond to Kirkuk and Erbil in the North, with a branch line to Khanaqin. Over recent years the railways have managed to carry out a considerable capital development program despite serious financial obstacles, but they now face the need of replacing, on a considerable scale, old track, rolling stock and locomotives.

Road transport has as yet primarily supplemented rather than replaced railway traffic. There are only about 11,000 passenger cars and a little over 9,000 trucks and buses in the country. Roads are generally inadequate. There are only about 2,500 kilometers of metalled and surfaced roads in all of Iraq. The remaining dirt roads quickly become impassable in bad weather. Some important

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433 expanded will, however, require financial assistance from the Industrial Bank. This should be arranged just as soon as plans can be formulated.

Petroleum Development

382 315 [471] The further development of the oil industry can safely be left to the internationally-owned companies now operating in Iraq. Under an agreement finalized early in October 1951, subject to ratification by Parliament, the three major oil companies—the Iraq Petroleum Company, the Mosul Petroleum Company and the Basra Petroleum Company—undertook to increase their oil output to 30,000,000 tons per year by the end of 1955 and to turn over to the Iraq Government 50 percent of the profit on their production before the deduction of taxes. Although output in 1950 amounted to only about 6,000,000 tons, there should be no difficulty about attaining the agreed target. The oil resources of Iraq are immense, the reserves of the Kirkuk field amounting reputedly to 1,000 million tons, with the new fields near Basra offering equal promise. In the development of these fields and means of transport, the oil companies have already made an investment of close to ID 90,000,000, which is now beginning to yield a rapidly rising output. Development in the Kirkuk and Mosul field has already proceeded on the assumption that a production capacity of at least 22,000,000 tons would be achieved in a few years, and with the completion of the pipeline to Banias, Syria, there should also be ample transport capacity. The balance of the projected output, namely 8,000,000 tons, will have to come from the newer fields near Basra. This may require some increase in drilling and will necessitate additional pipeline capacity to Fao, but neither of these will be difficult to accomplish.

382 466 The oil companies have been among the leaders in Iraq in providing better conditions and amenities for their employees and in instituting schemes for training skilled labor and technicians. They have been criticized, however, for their failure to appoint more Iraqis to leading positions. Under the agreement already cited they have undertaken to send 50 Iraqi students per year to British Universities to study various subjects relating to the oil industry, and also to establish a school in Kirkuk to train 60 Iraqis yearly in technical oil subjects.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

By and large this new partnership between the oil companies and the government should prove mutually beneficial.

The Government for several years has been considering the building of a modern oil refinery near Baghdad. In recent months, final plans were formulated and arrangements for its construction have apparently been made. This refinery, estimated to cost at least ID 7,000,000, is designed for an annual capacity of approximately 1,000,000 tons and when completed should be able to supply all of Iraq's anticipated requirements for refined petroleum products except for certain specialties.

The project will probably make it necessary to close the Alwand refinery, owned until recently by a subsidiary of the Anglo-Iranian Oil Company,[1] now producing something less than 70 percent of Iraq's requirements. Likewise, the use of Kirkuk crude, which can be obtained by the Government at cost, will probably make it necessary to close down the small oil field near Khanaqin which supplies the Alwand refinery, since it is unlikely that the oil resources in and near this field can be developed to such an extent that investment in a pipeline for export of the crude would be warranted.

Cotton and Rayon Textiles

In 1947, a cotton spinning and weaving mill was started near Baghdad, with a pilot plant consisting of 5,000 spindles and 84 automatic looms. The second stage, which is something over 70 percent complete, consists of 22,000 spindles and 500 automatic looms. The plant is modern in design and includes dyeing, printing and finishing equipment. About one half of the equipment has been in full operation for over a year, and shows good returns for an uncompleted plant which has not reached stabilized operation conditions. When completed and when operating on a full three-shift basis, it is expected that the spinning mill will produce 6,000,000 lbs. of yarn annually. Part of the spinning capacity is used in making yarn for sale to other small textile mills or even for home industries for weaving into cloth. In Mosul, for example, there are over 1,000 hand looms in various small home industries

[1] By an agreement reached in December 1951, the government took over ownership of the refinery, retaining the AIOC subsidiary provisionally as its operating agent.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

working shops, battery and electrical repair work, shops for repair of automotive and agricultural equipment, bakeries, confectioneries and food processing establishments of various kinds. The amount of capital required in individual cases is quite small but, in the aggregate, it adds up to a considerable sum. The Industrial Bank should arrange for a small-enterprise section to make surveys of small industries in each community, advise them concerning ways of improving their methods of production and assist in getting proper financial help where it is justified. It is estimated that ID 400,000 would be sufficient to meet the needs of these industries over the next five years.

The assistance of small industries by the Industrial Bank is to be preferred to assistance or stimulation of so-called cottage industries. Cottage industries may be of benefit in the over-populated areas of Asia, but for Iraq they do not appear to be an appropriate solution to industrial growth. Iraq's population is small in relation to the resources available. Over the long term its problem is not primarily one of creating a maximum number of jobs with a minimum of capital but rather one of utilizing capital resources in ways which will make a permanent addition to the productive capacity of the country and to the building of modern industrial enterprises.

Establishment of New Industries

The entrance of industry into new fields would help to balance the over-all development of the country and to utilize its resources more fully. At the same time it would increase employment and thereby aid in raising the general standard of living.

Nitrate Fertilizer, Sulphur and Cement Plant

The largest and perhaps most promising possibility for new industrial development lies in the utilization of the natural gas produced in conjunction with oil. Upon completion of the 30-inch pipeline, oil production at the Kirkuk field will be at a rate which will make more than 25 billion cu. ft. of gas available per year. For the most part, this gas will be wasted until some means is found for its economic utilization. This gas contains, according

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

382 387 to information afforded the Mission, 10.5 percent by volume of hydrogen sulphide with the remaining products being different types of hydrocarbons, chiefly methane. In the same area there are also large deposits of gypsum or hydrous calcium sulphate.

These waste gases and gypsum could be utilized for the economic manufacture of ammonium sulphate, a valuable fertilizer for agriculture; and, in the process, sulphur, carbon black and cement would become available as by-products. A plant of economic size and capable of satisfying approximately one half of Iraq's eventual needs should have an annual capacity of approximately 500,000 tons. In addition to ammonium sulphate, this plant would also produce approximately 100,000 tons of elemental sulphur and 300,000 tons of cement.

The most important part of such a plant would, of course, be that making ammonia. By this process, nitrogen and hydrogen under high pressure are synthesized into ammonia by means of a catalyst. Hydrogen for this process would be obtained by thermally cracking the gas and subsequently removing the carbon black, while nitrogen would be obtained by removing carbon dioxide and carbon monoxide from the flue gases.

The ammonia thus produced would then be combined with the sulphate radical from the gypsum. This is generally done by passing ammonia and carbon dioxide through a slurry of finely ground gypsum and mechanically separating the resultant products of ammonium sulphate and calcium carbonate. The ammonium sulphate which is in solution would be crystallized in evaporators while the calcium carbonate would be used in making cement.

Since the gas used in making ammonia must be free of sulphur, the plant would need to contain facilities for its removal. This could be accomplished in several ways, but a detailed study would probably show a combination of the Girbotal and Claus processes to be best suited for this particular project.

Facilities for the production of the required power and process steam would be conventional in every respect and would use gas for fuel.

In the first few years of operation, all of the products except cement would probably be exported. Later, however, only sulphur

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

and carbon black might be exported, with the ammonium sulphate being utilized domestically as fertilizer.

The integrated plant is estimated to cost approximately ID 25,000,000, including foreign exchange estimated at ID 22,000,000 mainly in pounds sterling. The total estimated cost of the plant may be broken down as follows:

Ammonium Sulphate and Carbon Black	ID 14,750,000
Sulphur Recovery	8,750,000
Cement Plant	1,500,000
Total Cost	ID 25,000,000

Estimates indicate that the plant may show net earnings of 18.5 percent on the investment and may break even when approximately 40 percent of its capacity is utilized. In these estimates the gross income has been figured on the basis of c.i.f. prices currently prevailing in London and the plant has been amortized over 15 years with interest payable at 4½ percent per annum. The underlying calculation is summarized below:

GROSS ANNUAL INCOME

Ammonium sulphate	500,000 tons @ ID 15 per ton	ID 7,500,000
Sulphur	100,000 tons @ ID 16 per ton	1,600,000
Carbon black	10,000 tons @ ID 93 per ton	930,000
Cement	300,000 tons @ ID 5 per ton	1,500,000
Total		ID 11,530,000

ANNUAL OPERATION COSTS

Amortization and interest		2,310,000
Freight (Rail and Ocean)		2,379,000
Bags		650,000
Maintenance		375,000
Salaries		530,000
Labor		146,000
Material and Supplies		55,000
Gas		135,000
Contingency		300,000
Total		ID 6,880,000
Estimated Net Profit		ID 4,650,000

The plant would probably need to be financed in its entirety by the Development Board, and it should be attempted only if a

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

382 387 reliable foreign chemical firm can be secured to design and construct it and, at least at the outset, operate it under a management contract.

The plant would give permanent employment to about 1,000 workers.

387 237 ***Bone Meal Plants***

Another promising field for new industry is the conversion of the waste products from abattoirs to fertilizers for domestic use. Bone meal, for example, is a very valuable fertilizer. Yet at present Iraq, with no domestic plant to utilize them, is exporting approximately 15,000 tons of bones per year to Europe.

There would probably be sufficient demand for fertilizer to support three plants, located at Basra, Baghdad, and Mosul. Their combined cost would probably amount to roughly ID 50,000, of which ID 45,000 would be in foreign exchange, principally pounds sterling. With help from the Industrial Bank, this could probably be financed by the abattoir owners. When completed the plants would give employment to about 60 workers.

Steel

327 Iraq is now producing about 5,000 tons of steel scrap per year. It is recommended that a small hand-operated mill and electric melting furnace be set up to convert this scrap into reinforcing bars, window shapes and small angles, all of which are in great demand. This mill ought to be located in Baghdad and arrangements made to obtain off-peak power from the Baghdad power plant or from the railroad shops. As an alternative to electric melting, crucibles might be considered. In either case, the cost of the plant would be approximately ID 300,000, including ID 200,000 in foreign exchange, mostly in hard currency. This mill could not satisfy the whole of Iraq's steel needs; nevertheless, it would furnish about 5,000 tons per year of certain types at probably half the cost of the imported steel it would replace.

The mill could be financed by private capital with help from the Industrial Bank. Foreign technicians would be required dur-

refinery on the river Alwand, near the town of Khanaqin.

The production of crude petroleum in Iraq amounted to 4,680,000 tons in 1946, 4,702,000 tons in 1947 and 3,427,000 tons in 1948, and is estimated at 4,326,000 tons for 1949.[2] The figures showing the crude petroleum production of the Middle-Eastern group, including Iraq, are given in an annex (see annex I, table 2).

135 Apart from petroleum, the subsoil of Iraq is rich in other minerals, such as coal, salt, sulphur, marble, limestone and various metals, including iron and copper. But the utilization of these resources has been delayed by the high cost of transport.

● 382 Although Iraq is so rich in petroleum, it has no refineries apart from the stabilization plant at Kirkuk, with an annual capacity of only 480,000 tons, and the Khanaqin Oil Company's small refinery on the Alwand, the daily capacity of which is 1,500 barrels, or 72,000 tons per year.

C. *Transport and communications*

Port

564 Basra is Iraq's only port. The designation "Port of Basra" generally refers to the whole length of the Shatt al-Arab, between the mouth of this river and the Naft-Umar lighthouse situated approximately 163 kilometres up-river from the Persian Gulf. The strip of land on the left bank of the river, between the Gulf and the Khaiyin Canal, is Iranian territory.

315 between Kirkuk and Haifa, running from the Jordan frontier to Haifa, remained to be built. When these two new pipe-lines are put into commission, the annual capacity of the four pipe-lines will reach 13 million tons. In view of the heavy demands of consumer countries and the vast resources of the petroleum region of Kirkuk, the Iraq Petroleum Company is planning the construction of a giant pipe-line, 71.1 to 81.3 centimetres (28 to 32 inches) in diameter, from Kirkuk to Bamas (Lebanon). With the exception of the stretch between Homs and Baniyas (80 kilometres), this pipe-line will run parallel (in the north) to the 16-inch pipe-line now under construction. The time estimated for the construction and the cost would appear to be sufficiently favourable to make the scheme feasible, and it is hoped that this pipe-line, with its annual capacity of 14,600,000 tons, can be put into use in 1953. The annual production of the Kirkuk basin would thus amount to 27-28 million tons.

• [382] Apart from the large pipe-lines described above, Iraq has a small pipe-line, 39 kilometres long and 10.2 to 15.2 centimetres (4 to 6 inches) in diameter, from the petroleum fields of Naftkhaneh to the Alwand refinery near Khanaqin, which has a refining capacity of 8,600 barrels (1,146 tons) per day, or 420,000 tons per year.

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
Iraq MH1

315 frontier. A 30–32-inch pipeline of 14 million tons' capacity was
433 opened to Banias in Syria (560 miles) in 1952.

In the MPC concessionary area exploration and drilling were carried out before 1931, but it was not until after the Second World War that oil of certain commercial value was discovered and produced, at Ain Zala, north-west of Mosul. In 1952 the field was linked by a 12-inch pipeline to the IPC pipeline system, to permit the export of its crude oil to the Mediterranean coast.

In the BPC concessionary area exploration began in 1939 and, when resumed at the end of the war, was made more effective by the application of new geophysical methods. A field producing oil of good quality was developed in the area of Zubair, the average depth of the wells—some 11,000 feet—being greater than in any neighbouring Persian Gulf oilfield and four times greater than at Kirkuk. Oil is carried the seventy-four miles from the field to a new oil port at Fao, where oil was first shipped in December 1951, through a 12-inch pipeline; a second pipeline, of 24 inches, was completed in 1953 to cope with the company's increased production programme under the terms of the 1952 agreement.

433 Production of crude oil for 1952 (the first year of MPC and BPC production) was as follows: Kirkuk (IPC) 15,553,000 tons, Ain Zala (MPC) 270,000 tons, Zubair (BPC) 2,238,000 tons.

471 The area of eastern Iraq excluded from the concessions of
433 these three companies has been developed by the Khanaqin
382 Oil Company, a subsidiary of AIOC, on the basis of agreements made in 1925 and 1926. The output of the company's refinery near Khanaqin, together with imports from Abadan, provided Iraq's internal requirements of petroleum products. In accordance with an agreement ratified in 1952, the Iraq Government has bought the refinery, the company undertaking to operate it for ten years and, if requested, to operate also the new government refinery near Baghdad which is to replace it; after the Khanaqin refinery is closed the company will retain its production area on the same terms as those of the IPC 1952 agreement, conditional on exporting an annual minimum of 2 million tons of crude oil.

The government refinery at Daura near Baghdad, on which work started in 1952, is designed to produce a million tons of refined petroleum products per annum, a figure well in excess of the present requirements of the country. Meanwhile a small refinery of some 175,000 tons annual capacity has been erected
[439] at Basra to help make good the deficiency caused by the cessation of petroleum imports from Abadan.

29:Dunn S-4 (1952)1952 MI Middle East
Iraq MHI

of the people are even more primitive than their ancestors of several thousand years ago. They live on the ground in mud huts, in the shadows of the stone ruin of their ancestors' homes. They draw water by hand from wells from which water was once pulled by giant water wheels; they irrigate their tiny garden patches with hand scoops where once large canals watered thousands of acres.

Despite the progress in education, less than half the children are in school, and only half of those fortunate ones finish the primary grades. In the country as a whole, 80 per cent of the males and 95 per cent of the females are still illiterate.

These people now hope for a new life, a place in the sun again.

DEVELOPMENT PROGRAMS

The internationally-owned oil companies operating in Iraq recently have increased oil output materially and expect by 1955 to be producing at a rate five times above the 1951 level. Half of the profits before taxes will accrue to the Iraq Government, and should amount to about $600 million during the next five years.

These revenues will be assigned to the Central Development Board, an autonomous agency established to insure greater continuity in the planning and implementation of development programs. An American, Wesley Nelson, formerly Assistant Commissioner of the Bureau of Reclamation in the United States Department of Interior, is a member of the board by invitation of the Iraq Government.

FINANCING

The Board is following rather closely a development program recommended by the International Bank for Reconstruction and Development after its special mission made a detailed study of the Iraq economy at the request of the government. The cost of the suggested five-year program, beginning with fiscal 1952-53, is estimated at approximately $471.8 million to be apportioned as follows:

Project	*In Millions of Dollars*
Flood control, irrigation, and drainage	154.5
Industry	103.6
Transport and communications	86.8
Community Facilities	65.0
Agriculture and Forestry	21.0
Education	17.1
Public Health	14.0
Development Board administration, studies, etc.	4.2
Miscellaneous expenditures	5.6
	471.8

To carry out the program the Development Board would have to spend $42 million in 1952-53 and successively larger sums each year, up to a total of $140 million in 1956-57.[33]

[33] *Economic Development of Iraq*, International Bank for Reconstruction and Development, 1952, p. 63.

29:Dunn S-4 (1952)1952 MI Middle East
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initiative and financial assistance of the government.[36]

The government has been advised to encourage development of light industries: Cotton textiles, cottonseed oil crushing mills, jute mills, bone fertilizer plants, automobile tire factories, small steel mills, central machine shops, concrete block plants, possibly a paper mill, a chemical factory for making inorganic fertilizer, and possibly salt refineries.

The Mission strongly urged the government not to attempt to own or operate these new factories itself, but to encourage private capital to do so.[37] This recommendation has been followed in the main. The Industrial Bank, created with funds derived from the oil royalties, has been financing private industry in a number of fields, particularly cotton textiles and cottonseed oil crushing and refining. The outstanding exception is the new petroleum refinery being built by the government.

OIL

Oil reserves in Iraq are thought to be tremendous—at least a third of the total Middle Eastern reserves, which are reckoned at 50 billion barrels, or

—Photo Courtesy of Technical Cooperation Administration

Capacity of the Kut Barrage on the Tigris River in Iraq is almost a quarter of a million cubic feet of water per second, which makes it the largest diversion dam of its kind in the world. The dam was built by British contractors for the Iraq Government in 1939. With oil revenues now pouring into the treasury Iraq plans to build several more large-scale irrigation facilities for storage and diversion. New projects are already in progress in the upper reaches of the Tigris River system.

[36] *Ibid.*, p. 22.
[37] *Ibid.*, pp. 26-27.

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about half of the world's total. However, Iraq's past output has been paltry compared to its potential. A year ago Iraq's oil was flowing at the rate of 160,000 barrels a day. The figure is now 185,000, and estimates are that it will jump to 440,000 before long. The handicaps have been transportation and political difficulty. Iraq's wells are hundreds of miles from the Persian Gulf or the Mediterranean Sea, which means pipelines have to be constructed. Before this year two pipelines were in operation from the Iraqi fields to Tripoli, Lebanon. A 12-inch pipeline to Haifa, Israel, has been put out of use since Iraq joined the Arab embargo of Israel. A new 16-inch line built almost to the Israeli border has never been completed for the same reason. Early this year one small new line was completed to the head of the Persian Gulf, which will have a capacity of about 40,000 barrels a day. The main addition is the 30-inch line to the Mediterranean just being finished. It runs to Banyas, Syria, and has a capacity of 280,000 barrels a day.

Mining is carried out by the Iraq Petroleum Company, owned by United States, Dutch, British, and French interests. Despite this diversified interest, there has been continuous trouble with reactionary groups in Iraq along the same lines, but less serious than those in Iran. Recently the Parliament approved a new oil contract which promises the Iraqi Government 50 per cent of profits before foreign taxes, and (from the western point of view) the political situation seems to have improved.[28]

COTTON TEXTILES

Until the erection of the Iraqi Spinning and Weaving Company mill in 1948, cotton was used primarily for filling mattresses, for upholstery work, and for the home industries. Around 2,600 bales of cheap raw cotton and cotton waste normally have been imported from India for this purpose. A small crop of unirrigated indigenous cotton raised in the north around Zakho goes into this market, too.

The Iraqi Spinning and Weaving Company in Baghdad doubled its capacity in 1951 and now has about 27,200 spindles and 580 looms, producing about 18 million yards and finishing 5 million yards annually. The company already has purchased more equipment to give a total of 39,000 spindles and 900 looms, capable of producing about 27 million yards of cloth annually. Several small mills weaving cotton and rayon and three small knitting mills are reported also.

The mill consumed 10,482 bales of cotton in 1951 and expects to use 15,000 bales in 1952. The cotton has been secured almost entirely from the domestic crop. A poor crop forced the mill to buy 1,500 bales from the United States in the early part of 1952, but this unusual situation is not expected to be repeated.

Funds authorized in the government budget for other cotton textile mills have not been expended, presumably because of the general opposition to government intervention in the field of private enterprise and because of the recent expansion in the Iraqi mill. This expansion was financed by the Industrial Bank, which owns about a third of the company's stock.

With this expansion the factory should be able to produce about 40 million yards of cloth annually, or about 60 per cent of the country's requirements of 70 million yards.

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[28] Carmichael, J. H., "Oil from the Middle East Hits a New High Mark," *New York Times*, March 23, 1952.

services. "The disease has been recognized", he said, "what was required was that medicine for the prescription should be supplied and the patient taught how to take that medicine". The same Minister informed us that he himself, as a young man called upon to draft a new educational programme, had included in it the provision of community centres, but that unfortunately this feature of the scheme had not materialized.

45. Community welfare organization on a self-help basis in Iraq is, indeed, as yet in its infancy. Some observers consider that an indispensable preliminary to its development is to create in the minds of a people long under the influence and domination of a feudal tribal system an effective desire for self-government.

46. As is generally known, Iraq is rich in oil resources and it is the policy of the Government to transfer mineral wealth into productive capital for the general welfare. A statutory Development Board was established in 1950 to ensure continuity of economic policy, regardless of political changes. Seventy per cent of the income from oil revenues is allocated to the Board as revenue for projects of water conservation, flood control, irrigation, drainage, industry, mining, etc. The Board is also responsible for co-ordinating the development schemes in these fields initiated by the various ministerial Departments. Over 200 foreign technicians are listed as working in Iraq in formulating a variety of development schemes, mostly relating to economic improvements. Some of the experts are in the direct employ of the Iraq Government; others have been assigned to the Government for short periods for specific purposes by agencies and organizations furnishing technical assistance on a bilateral or multilateral basis. Relatively few technicians have so far been concerned with social developments, but the country's needs in this respect have, we understand, been partially surveyed.

47. In the absence of detailed documentation, we left it to the Government agencies most directly concerned with the subject of our mission to determine whom we should see and to suggest which projects or institutions we should visit.

48. During our short stay in Baghdad we were able to visit at Tal Mohamed a well-constructed modern building designed to serve as a centre for community activities for the residents of a model housing estate constructed by the Ministry of Social Affairs for low-income government employees. Cheap transport facilities were available between Baghdad and the new estate, in which some 500 houses were already in occupation and more would be constructed as funds became available. The imposing building in which it is intended that community activities shall be carried out has been ready for use for more than a year but only some of the equipment and furniture (including seven beds for maternity cases) have been installed. A difficulty in finding suitable qualified staff has delayed the opening of the centre. When it is in full working order it is planned to offer nursing, educational and indoor and outdoor recreational facilities on modern lines. The general appearance of the centre and model village was marred by the state of the roads after heavy rains.

49. It is understood that centres similar to that at Tal Mohamed are planned for other urban areas. The Ministry of Social Affairs, which until recently formed part of the Ministry of Health, has also other plans under consideration for creating, with external technical assistance, pilot projects of community organization or demonstration centres, in urban as well as in rural areas.

50. A survey of Iraq villages jointly conducted by Mr. Gordon MacGregor (TCA adviser to the Ministry of Social Affairs) and Dr. Yusuf Khaddoury, M.D. (Officer in charge of international relations of that Ministry) reveals:

of the 33rd parallel. Affiliated companies have concessions over the remaining territory—the Mosul Petroleum Company in the region west of the Tigris and the Basra Petroleum Company south of the 33rd parallel. Oil is extracted from the Kirkuk fields by the Iraq Petroleum Company and conveyed by pipelines to Mediterranean ports. It was formerly pumped to terminals in Tripoli and Haifa, but the latter pipeline has been closed since the Arab-Israeli hostilities in 1948. A new pipeline, constructed from Kirkuk to the Syrian port of Banias, was opened early in 1952.

In 1938, the Basra Petroleum Company began drilling operations in the Persian Gulf area, where the existence of an extensive oil field has since been established. In 1950, a pipeline was completed to its shipping terminal at Fao, at the head of the Gulf. The activities of the Mosul company are still in the exploratory stage, but the production of oil has recently been started at Ain Zala. It is piped to the Mediterranean by a line which joins that from the Kirkuk fields at Baiji, on the Tigris.

A smaller oil field at Naft Khanah, near the Iranian border, is worked by the Khanaquin Oil Company, a subsidiary of the Anglo-Iranian Oil Company. This company operates a refinery on the Alwand River, near Khanaquin, which supplies petroleum products for local consumption. Since 1952, it has also constructed a small refinery at Basra to process products for use in southern Iraq. It obtains the crude oil from Naft Khanah or from the Basra Petroleum Company.

Iraq derives a considerable revenue from the pilgrimage traffic. The principal shrines of the Shia sect are located at An Najef, Kerbela, Kadhimain and Samarra, and, in addition to local pilgrims, they are visited annually by thousands of Shiites from Iran, Pakistan and other Moslem countries. The privilege of burial near the shrines is also coveted by devout Shiite Moslems.

Transportation is mainly by roads or waterways. Motor highways link the princi-

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The Basrah Petroleum Company Concession

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On December 4, 1938, the Basrah Petroleum Company, also a subsidiary of the Iraq Petroleum Company, obtained a 75-year concession covering all lands not included under previous concessions (about 93,000 square miles). Except that Basrah was to pay dead rent of £200,000 (gold) annually until commercial quantities were exported, all the other provisions were the same as those of the Mosul Petroleum Company agreement.[19] Basrah began producing and exporting oil in 1951.[20]

As discussed in Chapter II above, after the Persian Government granted the concession to D'Arcy, Great Britain succeeded in obtaining recognition by the Turkish Government that the concession covered the strip of territory on the Turco-Persian border which had been transferred from Persia to Turkey in 1913. This strip, known as the "transferred territories," was recognized as part of the Anglo-Persian concession by all the parties involved in the discussions, negotiations and prolonged deals over Iraqi oil. On August 30, 1925, an agreement was concluded between the Government of Iraq and the Anglo-Persian Oil Company, granting the concession in the "transferred territories" for thirty-five years and establishing the royalty payments on a percentage of profits basis. The agreement also called for the formation of a subsidiary company to operate within Iraq. The subsidiary company was to erect a refinery for oil products to be consumed in Iraq; all the oil produced was to be for local consumption. The following year, on May 24, 1926, the agreement was revised. Royalties were to be paid on a per metric ton basis, the same as I.P.C.; the subsidiary company was also to become a marketing agency throughout the country; and the concession was extended for an additional thirty-five years.[21]

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The subsidiary organized was the Khanaqin Company. It produced oil from the Naft Khaneh field, and its refinery at Alwand, near Khanaqin, terminus of a twenty-five mile pipeline, was completed in May 1927. Early in 1932 a marketing

[19] The full text of the concession is reproduced in *Iraq Government Gazette*, Dec. 4, 1938, 686-706; the law ratifying the agreement, 672.

[20] Iraq Petroleum Co., *Iraq Oil in 1951* (London, 1952), 21.

[21] *Special Report*, Col. No. 58, 1931, 222. Six hundred eighty-four square miles were covered by this concession.

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company, the Rafidain Oil Company, was organized for the purpose of supplying Iraq's petroleum requirements. In May of the same year Khanaqin made over to Rafidain that portion of its business which was concerned with the marketing of oil and oil products in Iraq.[22]

Production

Oil in commercial quantities was discovered as early as 1927.[23] It was not until 1934, however, with the completion of the Company's pipeline, that large quantities of oil were produced.[24] Since the major fields were inland, at Kirkuk, the output was inevitably limited by the capacity of the pipelines. Table III, on the following page, gives total production from 1927 up to and including 1951.

Pipelines and Refineries

The production of oil in Iraq was conditioned, at least in large measure, as was noted above, by transportation, hence the provisions in the original concessions for the transport of the oil.

The first major pipeline built by the Iraq Petroleum Company was a parallel 12-inch line from Kirkuk to Haditha, a distance of 150 miles, where it branched off in two directions, one line going to Haifa (Palestine) for a distance of 470 miles,

[22] *Report 1932*, 40. A short summary of the various concessions is given in *The Middle East. A Political and Economic Survey* (Royal Institute of International Affairs, London, 1954), 281-282, and in *An Introduction to the Past and Present of the Kingdom of Iraq* (by a Committee of Officials, Baltimore, 1946), 43-45. A generalized outline of the terms of the concessions, almost on a schematic basis, appears in Raymond F. Mikesell and Hollis B. Chenery, *Arabian Oil: America's Stake in the Middle East* (Chapel Hill, N. C., 1949), 44-48; a sketchy outline is also given in *Review of Economic Conditions in the Middle East 1949-1950*. United Nations. E1910/Add.2/Rev.1, ST/ECA/9Add. 2, New York, 1951), 58. Henceforth cited U.N., *Review 1949-50;* Longrigg, *Oil in the Middle East*, 66-76.

[23] Drilling began in April and in October Baba Gurgur No. 1 well came into production with 60,000 barrels a day. Mohammed al Naqib, "How Iraq's Oil Production Began and Grew," *Al Aswaq al Tijariya*, Feb. 6, 1954; see also *P.D.C.*, 207, col. 658, June 13, 1927.

[24] The Company spent about $62,000,000 from the time of the signing of the concession in 1925 until the oil began to flow through the pipeline for commercial marketing. U.S. Senate, *American Petroleum Interests*, 228.

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Table III. *Iraq Oil Production 1927-1951*

	In Metric Tons[25]		
1927	45,000	1940	2,514,000
1928	95,000	1941	1,566,000
1929	116,000	1942	2,595,000
1930	121,000	1943	3,572,000
1931	120,000	1944	4,146,000
1932	115,000	1945	4,607,000
1933	123,000	1946	4,680,000
1934	1,031,000	1947	4,702,000
1935	3,729,000	1948	3,427,000
1936	4,011,000	1949	4,067,000
1937	4,255,000	1950	6,479,000
1938	4,298,000	1951	8,351,000
1939	3,963,000		

	In Barrels[26]		
1927	338,000	1940	24,225,000
1928	713,000	1941	12,650,000
1929	798,000	1942	19,726,000
1930	913,000	1943	24,848,000
1931	830,000	1944	30,943,000
1932	836,000	1945	35,112,000
1933	917,000	1946	35,665,000
1934	7,689,000	1947	35,834,000
1935	27,408,000	1948	26,115,000
1936	30,406,000	1949	30,957,000
1937	31,836,000	1950	46,760,000
1938	32,643,000	1951	61,534,000
1939	30,791,000		

and one to Tripoli (Lebanon) for a distance of 380 miles.[27] The line, which had an annual capacity of 4,000,000 metric tons,

[25] United Nations, *Statistical Yearbook, 1949-1950*, 147, and *1951*, 141. Production in metric tons covering the years 1928, 1933 and 1938-1950 is given in U.N., *Review, 1949-50*, 60; figures in metric tons for I.P.C. in Walter E. Skinner's *Oil and Petroleum Year Book* (London), for the years 1934-1951 in the volumes for 1936, 1940, 1946, 1949, 1951 and 1952. I.P.C. production for 1934, 1938 and 1946-1951 appears diagrammatically in *Iraq Oil in 1951*, 8; the cumulative production from the beginning of operations to the end of 1951 is given as 68 million tons, 9.

[26] *World Oil*, July 15, 1952, 66; see also the graph in *Iraq Oil in 1951*, 8, covering two pre-war years and 1946-1951—limited, however to I.P.C.

[27] A detailed description of this pipeline is given in *American Petroleum Interests*, 212; U.N., *Review 1949-50*, 61. The building of this parallel pipeline

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was completed in 1934. The Anglo-Iranian Oil Company and the Dutch-Shell Company received their shares of oil at Haifa where, after the Consolidated Refineries were completed, it was refined. The American and French groups received their crude at Tripoli.

Immediately after World War II (October 1946) a second parallel pipeline to terminate at Haifa and Tripoli was started, but because of the Arab-Israel war the branch to Haifa stopped at the boundary, about 42 miles from the terminus; the branch to Tripoli was completed in July 1949. A 30-inch pipeline from Kirkuk to Banias (Syria) covering a distance of 556 miles and with an annual capacity of 12,000,000 tons, was completed in April 1952 and officially inaugurated on November 18. This large new pipeline made possible a 95 per cent increase in the oil production from Kirkuk as compared with that of 1951.[28]

For the Basrah area a 75-mile 12-inch pipeline, begun in 1948, was completed in October 1951 from the Zubair field to Fao on the Shatt-al-Arab, on the Persian Gulf; a parallel 24-inch line was commissioned on January 1, 1954. The new oil field of Rumaila, 20 miles west of Zubair was connected with the last-named field by a 20-mile 20-inch pipeline.[29]

In July 1952 a 135-mile 12-inch pipeline from Ain Zalah, in the Mosul area, to Station K2 on the main Kirkuk-Mediterranean pipeline, was completed.[30]

The question of refineries was one of the major issues between the Iraq Government and the Iraq Petroleum Company. The former was anxious to have refineries on its territory; they would not only supply refined petroleum products necessary for home consumption, but would also increase the country's income, employ a greater number of workers, and enable the Iraqis to learn the necessary technique in the advanced stages of the oil industry.

A small refinery to meet local needs—but perhaps more because the A.I.O.C. would not build a long pipeline to carry the limited quantity of oil produced at Naft Khaneh in the "trans-

was provided for in the agreement signed on Mar. 24, 1931 and the British Government had previously obtained agreements from the Governments of Palestine and Transjordan, *P.D.C.*, 248, col. 212, Feb. 10, 1931; *P.D.C.*, 250, col. 1080, Apr. 1, 1931.

[28] U.N., *Review 1949-50*, 61; *Iraq Oil in 1952*, 2. It took seventeen months to complete and cost £41 million.

[29] *Iraq Oil in 1953*, 27; *Iraq Oil in 1954*, 14.

[30] *Iraq Oil in 1952*, 27-30.

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ferred territories"—was erected at Alwand in 1927 by the Khanaqin Oil Company, as mentioned above.[31] It produced about 70 per cent of the petroleum products consumed in Iraq; the remainder was supplied by the Abadan refinery in Iran.[32]

In spite of persistent agitation by the Government, until 1951 the Iraq Petroleum Company refused to build more refineries in Iraq; it had two very small refineries at Kirkuk and Haditha, and a processing plant at Kirkuk. The great refineries were in Haifa and in Europe.

Closely connected with the question of refining was that of marketing of oil and oil products for internal consumption. As mentioned above, this was concentrated in the Rafidain Company. On December 25, 1951, the Iraq Government and the Khanaqin and Rafidain Companies signed an agreement providing for the purchase by the Government, at an agreed amount, of the Alwand refinery and the Rafidain facilities. Rafidain, acting on behalf of the Government, was to operate the refinery and, until 1961, was also to act as sole distributing agent for certain oil products for local consumption.[33]

To satisfy all local consumption demands, the Government decided to build a large refinery in the vicinity of Bagdad. Early in July 1951, it announced that it had accepted a bid from W. W. Kellog[34] of New York to erect a refinery south of Bagdad, with an annual capacity of 1,000,000 tons. Work on the refinery at Doura started in 1952 and was expected to be finished in 1955, at a cost of £10,000,000. A 135-mile 12-inch pipeline was to bring crude from pumping station K2. In the meantime, as a temporary measure to meet the emergency created by the shutdown of Abadan, a small refinery with a 175,000-ton annual capacity was erected at Muftiya, outside of Basrah. In addition, the stabilizing and topping plants at Kirkuk helped to meet immediate local needs.[35]

[31] *P.D.C.*, 207, col. 1467, June 20, 1927.

[32] International Bank for Reconstruction and Development, *The Economic Development of Iraq. Report of a Mission* (Baltimore, 1952), 150-151. Henceforth cited, International Bank, *Iraq Mission Report.*

[33] Iranian Oil Co. Ltd., *Annual Report and Accounts as at 31st December, 1951*, 21.

[34] *The Christian Science Monitor*, July 6, 1951.

[35] *Iraq Oil in 1952*, 16-17; *The Middle East. A Political and Economic Survey*, 283; United Nations, Dept. of Economic Affairs, *Summary of Recent Economic Developments in the Middle East 1952-53* (New York, 1954), 49-50. Henceforth cited U.N., *Summary 1952-53.*

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In July 1952 the Iraq Government set up a five-man Refineries Board to administer the refineries, distribution and prices.

The problem of lubricating oil was not met by all these refinery projects, and in the middle of May 1954 the Government allotted 3,000,000 dinars (decided upon in September 1953) for the erection of a lubricating oil refinery, in the vicinity of Doura, which would have an annual capacity of 25,000 tons. This project was to be administered by the Refineries Board.[36]

It would thus appear that Iraq was well on the way to meet home requirements for petroleum products; in fact, when the general refinery in Doura is completed, the refined products from Alwand will have to be exported. Such a possibility was anticipated and provisions were made with the Khanaqin Oil Company to operate Alwand on an export basis.[37]

The 1952 Agreement

The Red Line Agreement provided, in addition to the restrictions mentioned above, that in case a group was unable to take its share of oil, that share would be forfeited without compensation. The French group could not take its share during the Vichy regime, nor could C. S. Gulbenkian; Standard of New Jersey could not take deliveries while the Mediterranean was closed to tankers.

When the war was over the Iraq Petroleum Company again expanded operations, and each group took its proportionate share of the crude oil produced. The Compagnie Française des Pétroles and Gulbenkian attempted to obtain a reaffirmation of the restrictive provisions of the Red Line Agreement. This would have guaranteed to the French and Gulbenkian not only increased production in Iraq, but also a proportionate share in any acquisition which Standard of New Jersey and Socony-Vacuum might have acquired in the Arabian American Oil Company. The American companies were unwilling to reaffirm

[36] *Al Zaman*, Sept. 7, 1953. For a description of the Government refinery projects see United Nations, Department of Social and Economic Affairs, *Economic Developments in the Middle East, 1945 to 1954* (New York, 1955), 117.
[37] Longrigg, *Oil in the Middle East*, 193.

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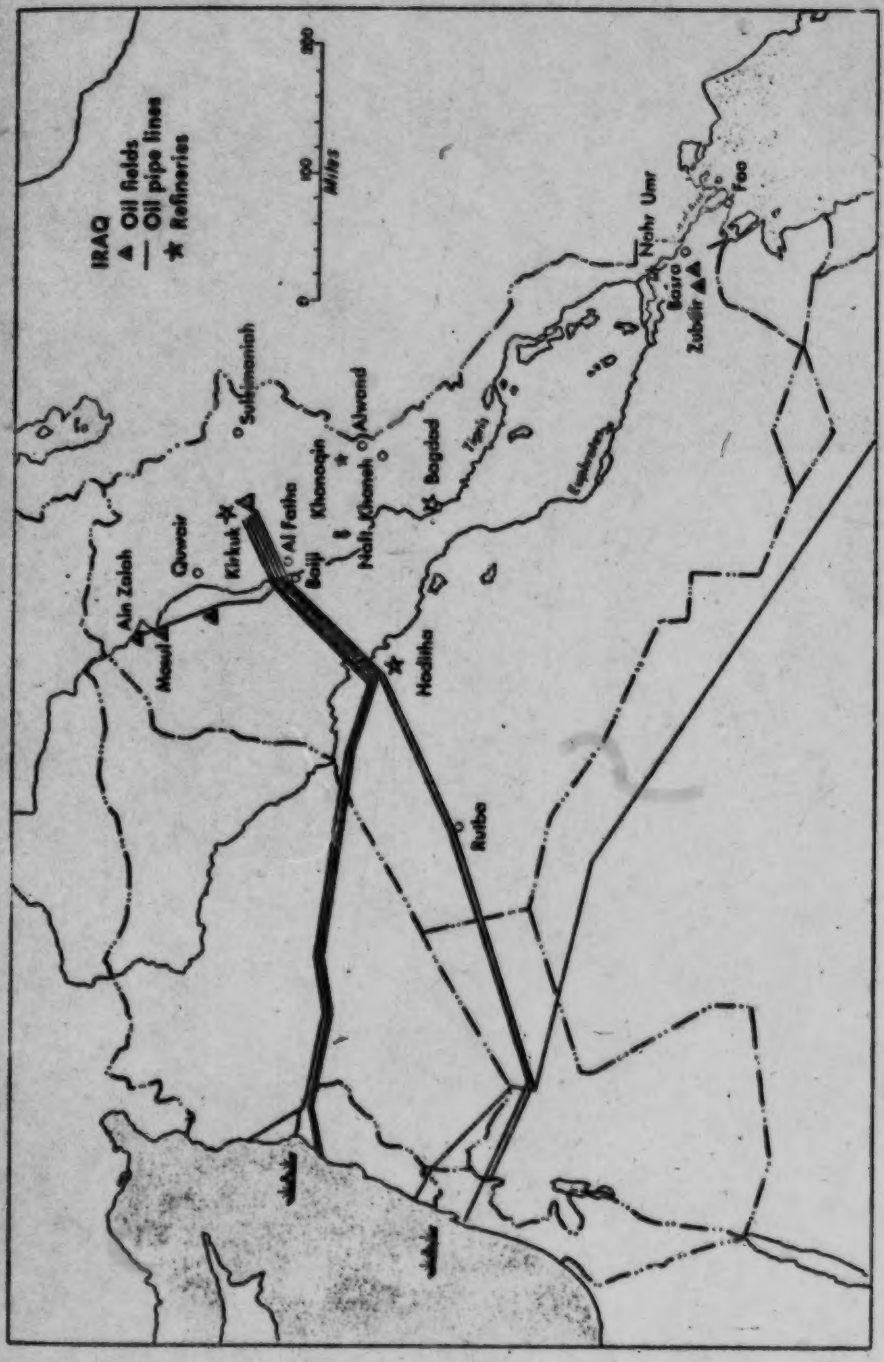

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industrial and handicraft production, but most of those were employed in small undertakings, with only about 2,000 working in what might be classified as modern industrial plants.[14] The United Nations reported in 1951 that industry continued to play a very minor part in the Iraqi economy and that the gross output was estimated at not more than ID 3,000,000.[15]

The general industrial and economic situation could perhaps be gauged by the consumption of oil and oil products, especially since the country had these supplies in such abundance. In 1929, internal oil consumption, including refinery needs, was 70,000 metric tons; in 1937 it had risen to 132,000 tons, but in 1950 it was only 929,000 tons. Excluding refinery needs, consumption in 1937 was only 88,000 tons; in 1949, 518,000; in 1950, 619,000; in 1951, 635,000; and in 1952, 690,000.[16]

The level of civic responsibility and national consciousness is illustrated by the taxpaying practices of the Iraqis. The first income tax law was enacted in 1927, but not before considerable modifications had been made and a long time had elapsed did the Government begin to receive any substantial revenue. The following table shows the annual revenue from income tax, the total revenue, and the percentage of income taxes in the total revenue:

Table IV. *Iraq, Percentage of Income Tax in Total Revenue*

Year	*Income Tax (in I. D.)*	*Total Revenue (in I. D.)*	*Percentage*
1943	1,016,082	18,810,000	5.4
1944	1,293,089	20,700,000	6.2
1945	1,149,394	20,790,000	5.5
1946	1,032,054	25,520,000	4.0
1947	1,081,379	23,510,000	4.6
1950	2,354,000	31,579,000	7.5[17]

[14] International Bank, *Iraq Mission Report*, 2, 129. Another estimate gives the total number of industrial workers in 1950 as not more than 72,000, including those employed in the oil industry. "The Economic Development of Iraq," *The Times Review of Industry*, Sept., 1953, 93.

[15] United Nations, Dept. of Economic Affairs, *Review of Economic Conditions in the Middle East 1951-52* (New York, 1953), 43. Henceforth cited U. N., *Review 1951-52*.

[16] U.N., *Review 1951-52*, 62; U. N., *Summary 1952-53*, 57; Anglo-Iranian Oil Co. Ltd., *Annual Report and Accounts for the Year ending 31st December 1952*, 20;—*Annual 1953*, 19.

[17] Great Britain, *Iraq*, 22; U.N., *Review 1949-50*, 78; *Annual Report of the National Bank of Iraq, July 1949-December 1950*, 53.

67: United Nations S-5 (1945-1954) 1955 MI Middle East
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Chapter 4

IRAQ

Developments to the End of the Second World War

433 At the end of the First World War, when Iraq was constituted as a State, very little had been done to develop its economy. An over-all irrigation 312 programme had been drawn up, and the Hindiyah barrage had been built on the 315 Euphrates and work begun on the Habbaniyah escape channel, but the outbreak of war had interrupted progress. The war had also prevented the exploitation of oil deposits by the Turkish Petroleum Company, formed in 1914. In the nineteen twenties, development was started. The digging of canals, the building of minor [496] works and the installation of irrigation pumps resulted in a substantial increase in cultivation, and there was also a slight improvement in farming methods. Railways were extended and other means of transport improved.

436 Further steps were taken in the nineteen thirties. In 1932, instead of the 312 rupee, the Iraqi dinar became the unit of currency. The Kut barrage, on the 433 Tigris, and various canals, regulator dams and minor projects were completed. The establishment of a few cotton gins, textile plants and other factories 652 producing consumer goods marked the beginning of modern industry. A government- 423 owned Agricultural and Industrial Bank was set up. A land settlement law was passed in 1932 and amended in 1938, and work on land settlement began in 1933.

471 Of more importance to the Iraqi economy was the development of the petroleum 382 industry. In 1925, the Iraqi Petroleum Company, a successor to the Turkish 315 Petroleum Company, was granted a concession, and in 1927 the Kirkuk oilfield was 651 discovered. By 1934, that field had been brought into production, and two 652 pipelines, with an annual capacity of 2.2 million tons each, had been laid to the Mediterranean coast; these developments required an investment of $62 million. Exports of oil began that year. The royalties and other revenues from petroleum accruing to the Government greatly increased its receipts and made it possible to augment expenditure on economic and social development.

433 During the Second World War Allied troops stationed in Iraq spent large sums on local purchases; from 1941 to 1944 inclusive, these expenditures totalled £64 million. There was a corresponding increase in national income, expressed in monetary terms, and prices rose considerably, the wholesale price index reaching a peak of 590 in 1943 (December 1938 to August 1939 = 100) and standing at 503 in 1945. This addition to national income and rise in prices stimulated agriculture; the area under cultivation was considerably extended, by irrigation and greater use of farm machinery, and although yields declined, total output increased somewhat. The greater part of the Allied expenditures was saved, in the form of sterling balances, which, in July 1947, amounted to £57.9 million. 1/

1/ National Bank of Iraq, Annual Report, July 1949-December 1950 (Baghdad, 1951).

Petroleum

433 The petroleum industry in Iraq has made striking progress during the post-war
382 period. Production and exports, which had been low mainly owing to the lack of
315 transport facilities, increased sharply following construction of new pipelines
439 to the seacoasts. Exploration activities led to the discovery of new oilfields, which are being developed. As a result of increasing output of petroleum and the revision of the terms of payment, Iraq's oil revenues have multiplied. These revenues have provided the financial means for development of the country's resources. Revenue from the oil industry, which is in the form of sterling, together with the substantial and rising foreign exchange disbursements of the oil companies for local expenditures, increased considerably the foreign exchange
[464] supplies of the country and made larger imports possible. Availability of petroleum products, at relatively low cost, has facilitated economic development, and the consumption of oil products has increased severalfold. In addition, the petroleum industry has given employment to an increasing number of employees (see table 27) and is providing them with training. After a setback during the war years, when production declined to 1.6 million metric tons in 1941, output of crude petroleum in 1944 recovered to its pre-war level of 4.3 million metric tons. Construction of two additional pipelines, parallel to the previous lines and with a yearly capacity of about 4.5 million tons each, started immediately after the end of the war. The pipeline to Tripoli was completed in 1949, but construction of the other, destined for Haifa, was interrupted by the Palestine conflict and it remains incomplete. Another large-diameter pipeline with an annual throughput capacity of 13.5 million tons, linking the Kirkuk field to Baniyas in Syria, was completed in 1952 at a cost of ID 41 million. In the meantime, the activities of the Basrah Petroleum Company and the Mosul Petroleum Company, Ltd., both affiliated with the Iraq Petroleum Company, led to the discovery of Ain Zalah and Butmah oilfields in the Mosul area, and Zubair and Rumaila oilfields near Basra. The development of these fields, especially Zubair, and the installation of pipelines and oil handling facilities during the past four years, has increased substantially the crude petroleum export capacity of Iraq. In addition, another smaller oilfield had been discovered by a subsidiary of the Anglo-Iranian Oil Company before the war at Naftkhaneh, near the Iranian border, and its output, which was refined locally, served the domestic market exclusively.

As a result of the foregoing developments during the last decade, as well as increasing world demand for petroleum, production of crude oil, which had declined from 4.7 million tons in 1946 and 1947 to 3.4 million tons in 1948, because of the Palestine conflict and the shutdown of the pipeline to Haifa, started to rise sharply, to 6.5 million tons in 1950, 18.9 million in 1952, and 29.6 million in 1954, representing in the latter year 4.3 per cent of the world's crude petroleum output as against 1.5 per cent in 1938. This production may be compared with proved oil reserves, which were estimated at 700 million tons in early 1949, and nearly 2,300 million tons at the end of 1954. Total investment in the petroleum industry of Iraq was estimated in 1952 at approximately ID 90 million, of which the main portion had been for construction of pipelines.

439 Iraq is exclusively an exporter of crude petroleum; the value of petroleum
382 exports was estimated at ID 137 million in 1954 as compared with ID 10 million
471 in 1938. Exports are handled by the parent companies of the Iraq Petroleum Company and its affiliates, but under the terms of the February 1952 agreement,

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Table 27. Iraq: Operations Of Petroleum Companies, Selected Years

(Output in thousands of metric tons; value in millions of Iraqi dinars)

Year	Production (crude petroleum)	Consumption of petroleum products	Estimated value of crude petroleum exports	Value of imports by petroleum companies	Direct payments by petroleum companies a/	Foreign exchange disbursements by petroleum companies for local expenses	Number of employees in petroleum industry b/
1927-33 ...	105	125	-	...	0.64	...	3.6
1938	4,298	190	10.3	1.0	1.98	0.58	4.5
1941	1,566	265		0.3	1.46	...	3.3
1946	4,680	385	10.8	2.4	2.33	2.14	11.3
1947	4,702	470	14.0	5.0	2.35	5.60	14.6
1948	3,427	505	11.4	9.3	2.01	7.03	14.2
1949	4,067	520	14.1	10.3	3.24	6.40	12.9
1950	6,479	560	28.7	8.4	5.35	4.39	11.4
1951	8,351	610	37.1	8.7	13.21 c/	5.69	11.0
1952	18,843	710	83.0	14.4	37.41 c/	7.18	13.3
1953	28,217	795	125.6	13.2	49.87 d/	...	13.2
1954	29,550	...	136.9	...	67.50 d/	...	...

Source: United Nations, Statistical Yearbook; International Monetary Fund, Balance of Payments Yearbook, and International Financial Statistics (Washington, D.C.); Ministry of Economics, Statistical Abstract of Iraq (Baghdad); National Bank of Iraq, Quarterly Bulletin No. 11, July-September 1954 (Baghdad).

a/ Figures are for fiscal years beginning on 1 April of the year stated.

b/ Thousands; end of year data.

c/ Including ID 5 million for settlement of previous claims.

d/ Calendar year.

67: United Nations S-5 (1948-1954) 1955 MI Middle East
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439 the Government of Iraq is entitled to take, as part of the payment by the oil companies, up to 12.5 per cent of crude oil produced by the operating oil companies and to develop its own export market. Refining activities are relatively small. There were three refineries at the end of 1953, with a combined annual capacity of nearly 800,000 tons of crude throughput. The output of petroleum products increased from 350,000 tons in 1949 to 690,000 tons in 1952. In order to increase refining capacity to meet rising local demand, the Government is constructing a refinery, with a capacity of over one million tons a year at Dora, near Baghdad. The plans was expected to cost ID 9 million and to start operations in 1955. In addition, the Government approved in 1953 a proposal to construct a lubricating oil plant to meet local needs. These government refineries will be supplied by crude oil, sold by the Iraq Petroleum Company, according to the February 1952 agreement, and delivered to the Government at K.2 pumping station; from there the Government will carry it in its own pipeline. The price of such oil, which will be for sale only in Iraq, is to be five shillings, sixpence, per ton of oil, plus a fixed charge of £63,000 per annum as the cost of pumping such oil to K.2 station. Consumption of petroleum products in Iraq increased from about 190,000 tons in 1938 to 385,000 tons in 1946 and nearly 800,000 in 1953.

651 Government revenues from oil operations were multiplied because of increasing
382 production and exports and because of changes in the terms of payments by the
471 producing companies. Prior to 1950, Iraq received the equivalent of $1.65 a ton, which was increased to about $2.45 a ton according to the agreement concluded in August 1950. This in turn was superseded, in February 1952, by a new agreement, retroactive to 1 January 1951, between the Government of Iraq on the one hand and the Iraq Petroleum Company, Basrah Petroleum Company and Mosul Petroleum Company, on the other. The agreement provided for an equal sharing of profits, with profits to be determined before deduction of foreign taxes, on the basis of fixed values and costs of petroleum. Under article 9 of this agreement, the share of the Government in profits from crude oil of Kirkuk quality on the Iraqi-Syrian border was calculated to amount to 35s. 6d. per long ton in 1951, increasing to 40s. 6d. in 1953 and thereafter; the corresponding figures on the Persian Gulf at Fao were 29s. 4 1/2d. and 34s. 4 1/2d. per long ton, respectively. This provision involved a discount of 17s. 6d. per long ton for Kirkuk oil from its Iraqi-Syrian border value, and 13s. for southern Iraqi oil from the posted prices in the Persian Gulf. A new agreement reached in March 1955, retroactive to January 1954, reduced this discount to a flat rate of 2 per cent, and resulted in a rise of 7s. per ton in revenue for Iraq. Direct payments to the Government, which were the equivalent of about ID 2 million in the fiscal year 1938/39 and ID 2.3 million in 1946/47, increased to ID 5.4 million in 1950/51 and nearly ID 68 million in 1954, all paid in sterling. Local expenditures by the oil companies for the purchase of local materials and payment of wages to workers, kept pace with the development of the petroleum industry; such sterling disbursements of the oil companies amounted to the equivalent of ID 7.2 million in 1952 as against ID 2.1 million in 1946 and ID 580,000 in 1938.

Other industries

433 Government attempts to promote industrialization began with the "Encouragement of Industries" Law of 1929, which exempted industrial machinery and certain raw materials from customs duties and also exempted new industries from certain taxes;

these schemes would raise annual capacity to over a million tons. Other projects include a sugar factory using locally grown beets to produce 10,000 tons of sugar per annum and refine 25,000 tons of imported sugar, at an estimated cost of ID 1.78 million; a pilot paper plant; a glass factory; a rayon factory; and a tobacco factory. 1/

The most important project connected with petroleum is a refinery with an annual capacity of one million tons, at Dora, near Baghdad. Completion was scheduled for 1955 and total costs have been estimated at ID 10.5 million. A pipeline supplying the refinery with crude petroleum, from Baiji, on the Euphrates west of Kirkuk, has been completed and five pipelines are under construction to carry the refined products to Baghdad and Um Al Adhem. 2/ An asphalt refinery being built at Qayara, near Mosul, at a cost of ID 1.15 million, is expected to produce 60,000 tons of asphalt per annum, as well as 24,000 tons of gas oil. A smaller plant at Muftiya, near Basra, with an annual capacity of 6,000 tons, was scheduled to start operations at the beginning of 1955. 3/ A lubricating oil refinery has also been approved near Baghdad; it will produce 25,000 tons and cost 3.4 million.

The major project under consideration is that for utilizing natural gases from the Kirkuk oil wells to produce chemical fertilizers, cement, sulphur and electric power. Two alternative projects have been submitted, one of which would cost ID 33 million and produce 500,000 tons of nitrogen fertilizers, 200,000 tons of cement and 100,000 tons of sulphur, while the other would cost ID 20 million and produce half these quantities.

A survey of mineral resources is being carried out by a group of foreign consulting engineers. Negotiations are proceeding with a United States sulphur company regarding the exploitation of Iraq's sulphur deposits, which are believed to be large.

Other development projects include a highway and bridge building programme, the expansion of Baghdad airport and improvement of telecommunications. In addition, a large-scale building programme is under way, including hospitals, schools, low-cost housing and public buildings.

The new Five-Year Plan

The Ministry of Development and the Development Board have approved the new Five-Year Plan for the financial years 1955/56 to 1959/60. Subject to approval by Parliament, the plan calls for an estimated total expenditure of ID 303,306,100. Revenue estimates total ID 252,658,000. These are calculated on an estimated annual revenue of ID 43 million derived from a 70 per cent share of the oil receipts making a total of ID 215 million, plus a sum of about ID 38 million from previous years. The deficit of about ID 50 million is to be balanced by an anticipated increase in oil revenue during this period.

1/ The Iraq Times, 20 October 1954.

2/ Ibid., 6 December 1954.

3/ Ibid., 19 November 1954.